EXHIBIT 24

Expert Report:

Treasure Island, LLC v. Affiliated FM Insurance Company

Expert Report
Alex LeBeau, PhD, MPH, CIH
Treasure Island, LLC v.
Affiliated FM Insurance Company
Case No. 2:20-cv-00965-JCM-EJY
United States District Court
District of Nevada

Prepared for:
Christopher Cunio
Hunton Andrews Kurth LLP
60 State Street, Suite 2400
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Prepared by:
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Exposure Assessment Consulting LLC.
Orlando, FL

Date:
November 6, 2020

[redacted]

Scope of Engagement:

I was engaged by Hunton Andrews Kurth LLP in the matter of Treasure Island LLC v. Affiliated FM Insurance Company, which is currently pending in Federal Court in Nevada. I was asked to give opinions within my area of expertise, industrial hygiene, on the following topics: (1) If and how individuals with COVID-19 at Treasure Island impact the property; (2) if there was an impact on the property, whether the closure order was a reasonable response to the impact; and (3) the purpose of the ongoing administrative controls post-reopening. A list of my publications and presentations is provided on my curriculum vitae in Appendix A. A full list of documents I considered in preparation of this opinion is in Appendix B. Testimony in the previous four years is found in Appendix C. My opinions are based on my knowledge, skills, training, education and materials considered identified in Appendix B. All opinions expressed in this report are to a reasonable degree of scientific certainty. I was compensated at a rate of $340 per hour for work in connection with this report. My rate for deposition or trial testimony is $500 per hour.

Summary of Qualifications:

I am a certified industrial hygienist (CIH), a board certification issued by the American Board of Industrial Hygiene (ABIH), and I am licensed by the State of Florida, Department of Business and Professional Regulations as a Mold Assessor. I possess a Master of Public Health (MPH) degree and a Doctor of Philosophy (PhD) degree in toxicology and risk assessment from the University of South Florida (USF) College of Public Health. I hold a certificate in clinical epidemiology from the USF College of Public Health. I also serve as an adjunct professor at USF.

I am currently the owner of Exposure Assessment Consulting, LLC in Orlando, FL, where I offer toxicology, industrial hygiene, and public health consulting services. During my thirteen-year career, I have evaluated exposures to a number of chemicals and biological agents. I have assessed the safety of novel antimicrobial pesticide products for Canadian registration purposes and evaluated the efficacy of registering a product that was considered an antimicrobial pesticide by the U.S. Environmental Protection Agency (U.S. EPA). As such, I understand how antimicrobials are intended to work on surfaces and other mediums for disinfection purposes.

The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) recognizes industrial hygienists as occupational safety and health professionals who focus on recognizing, evaluating, and controlling chemical or biological health hazards or stressors that may cause sickness, impaired health and wellbeing, or significant discomfort and inefficiency in workers or in the community. As OSHA recognizes, an industrial hygienist can provide expert insight in a variety of areas, including the “magnitude of chemical, biological, or physical exposure, and the degree of associated risk” (OSHA 3160, 1999).

I have performed indoor environmental quality assessments at healthcare, commercial, residential, and industrial facilities to evaluate the exposure impacts on building occupants. During some of these evaluations, I have evaluated the impacts of *Legionella* on facility water systems and occupants of the facility. I have evaluated indoor contamination at facilities from accidental releases and as a result of manufacturing operations. Because I am a licensed mold assessor, I have also evaluated the impacts of bioaerosols on a facility and its occupants. I am a co-author

on American Industrial Hygiene Association (AIHA) COVID-19 guidance documents related to building impacts of COVID-19 and cleaning and disinfection recommendations.

Summary of Opinions

It is my professional opinion that:

1. Individuals with COVID-19 at Treasure Island altered the physical characteristics of surfaces and the air of occupied spaces at the location and at facilities in the vicinity with respiratory secretions and aerosols. As a result, the surfaces and air of occupied spaces at Treasure Island became vehicles for COVID-19 transmission.
2. The Nevada Governor's closure order was a reasonable response to address the impact of COVID-19 on surfaces and the air of occupied spaces at and in the vicinity of Treasure Island.
3. Treasure Island has re-opened with administrative and engineering controls in accordance with best practices to mitigate and control the impact of COVID-19 on surfaces and the air of occupied spaces at the location.

Opinion 1: Individuals with COVID-19 at Treasure Island altered the physical characteristics of surfaces and the air of occupied spaces at the location and at facilities in the vicinity with respiratory secretions and aerosols. As a result, the surfaces and air of occupied spaces at Treasure Island became vehicles for COVID-19 transmission.

a. COVID-19: From China to Las Vegas

On December 31, 2019, the World Health organization (WHO) received a report of a viral pneumonia out of Wuhan, Hubei province, China (WHO, 2020a). While the scope of the virus's impact was unknown at the time, a case of the virus was reported on January 13, 2020, in Thailand, the first case reported outside of China (WHO, 2020a). On January 21, 2020, the first United States (US) case of the 2019 novel coronavirus (COVID-19) was identified in Washington State (CDC, 2020a). On January 30, 2020 the WHO named COVID-19 a "public health emergency of international concern" (WHO, 2020a), followed closely by a January 31, 2020 declaration by the US Secretary of Health and Human Services that the novel 2019 coronavirus is a public health emergency (HHS, 2020). On February 2, 2020, subsequent to this announcement, President Trump restricted travel from China, that included suspending entry to the US for most travelers arriving from China, and US citizens were required to quarantine for 14 days if they were traveling back to the US from Hubei province (NPR, 2020).

The WHO held a COVID-19 joint mission February 16-24, 2020. The summary report from the meeting included information on transmission in closed settings and that "close proximity and contact among people in these settings and the potential for environmental contamination are important factors, which could amplify transmission" (WHO, 2020c). By March 12, 2020 there were 1,645 cases of COVID-19 in the US (Whitehouse, 2020). In his March 13, 2020 proclamation, President Trump announced that the COVID-19 outbreak in the US was a national emergency (Whitehouse, 2020). On the same day, WHO announced that COVID-19 was a pandemic (WHO, 2020d).

On March 12, 2020, Governor Sisolak (Nevada) declared an Emergency to facilitate the state's response to COVID-19 and its impact (NV ED 002, 2020; TI_000637-000638). Within the directive, the governor ordered that "The Nevada general public shall cease gathering at gaming establishments, and all gaming devices, machines, tables, games, and any equipment related to gaming activity shall cease operations effective March 17, 2020, at 11:59 p.m., for the duration that this Directive shall be in effect" (NV ED 002, 2020; TI_000637-000638). The Nevada Gaming Control Board followed up the governor's emergency directive and issued a temporary suspension of "All gaming devices, machines, tables, games, and any equipment related to gaming activity" and that those operations "must be shut down by 11:59 pm on March 17, 2020" (NGCB, 2020b; TI_000252).

In March 2020, cases of COVID-19 had been identified in Nevada. The first reported Nevada case was on March 5, 2020 (KTNV, 2020). On March 11, 2020, the Mirage located in Las Vegas notified the public that a guest had tested positive for COVID-19 (MGM, 2020). By March 20, 2020, the Southern Nevada Health District (SNHD) reported 126 cases of COVID-19 in Clark County, Nevada, including two (2) deaths (SNHD, 2020a). On the same day, Governor Sisolak ordered the closure of all non-essential businesses (ED 003, 2020; TI_000710-712). On March

31st, Governor Sisolak issued a stay at home order, that ordered all Nevadans to stay in their residences, unless the situations met the exceptions within the order (ED 010 TI_000785-786). Other states from where visitors to Las Vegas travel issued stay at home orders in the latter half of March: California on March 19th (Cal N-33-20, 2020), Washington State on March 23rd (WASH 20-25, 2020), and Texas on March 31st (TX EO, 2020) (Las Vegas, 2019). By March 31, 2020, the day that Governor Sisolak issued the stay at home order, there were 961 total COVID-19 cases in Clark County, NV and 28 deaths (SNHD, 2020b).

Reports of COVID-19 positive individuals in the events leading up to Treasure Island closing and after the facility closure indicate that COVID-19 was present in Las Vegas in March 2020. The COVID-19 incubation period is between 2 and 14 days, with a median of 5 days (CDC, 2020c). Any detections of COVID-19 positive individuals in the Las Vegas area would have resulted from infection that occurred 2-14 days before the onset of their symptoms and subsequent testing.

b. Impact of persons with COVID-19 on surfaces and air in occupied spaces

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) identifies an occupied zone (i.e., space) as “the region normally occupied by people within a space.” (ASHRAE, 2020a). Examples of occupied spaces can include but are not limited to hotel lobbies, public restrooms, offices, theaters, and restaurants. They are spaces typically designed to be occupied by people for some specific use. Occupied spaces can contain furniture, fixtures, and equipment.

Occupied spaces are typically conditioned spaces, which means the air inside the occupied space can be thermally regulated in some way. Thermally controlling a space is done by conditioning air using either natural sources or through mechanical systems (e.g., heating, ventilation, and air-conditioning (HVAC) systems).

Surfaces and the air inside occupied spaces have the potential to serve as transmission mediums and some pathogens can have multiple ways of being transmitted to uninfected individuals.

Surface transmission is typically through indirect contact with a disease-causing agent. Indirect transmission of an infectious agent occurs through an intermediate vehicle, like a fomite (i.e., an inanimate object that can be impacted by an agent and can serve as a transmission route).

In public health terms, infectious agents can also be transmitted in the air as respiratory droplets. Droplets must make direct contact with an individual’s upper respiratory tract mucosa or conjunctivae (i.e., eye) for an infection to occur (CDC, 2007; AIHA, 2006). These droplets are classified in guidance documents as being in the 5 to 10 micrometers (µm) range and travel short distances.

Airborne transmission is the spread of infectious material on respirable droplet nuclei or particles that can travel over long distances through air movement (sometimes referred to as aerosols).[1] Individuals inhaling these aerosols do not need to be face-to-face with an infected individual and can in fact be in another room when they inhale the infectious air (CDC, 2007). See Figure 1 for a comparison of surface/fomite transmission and airborne (droplet and aerosol) transmission.

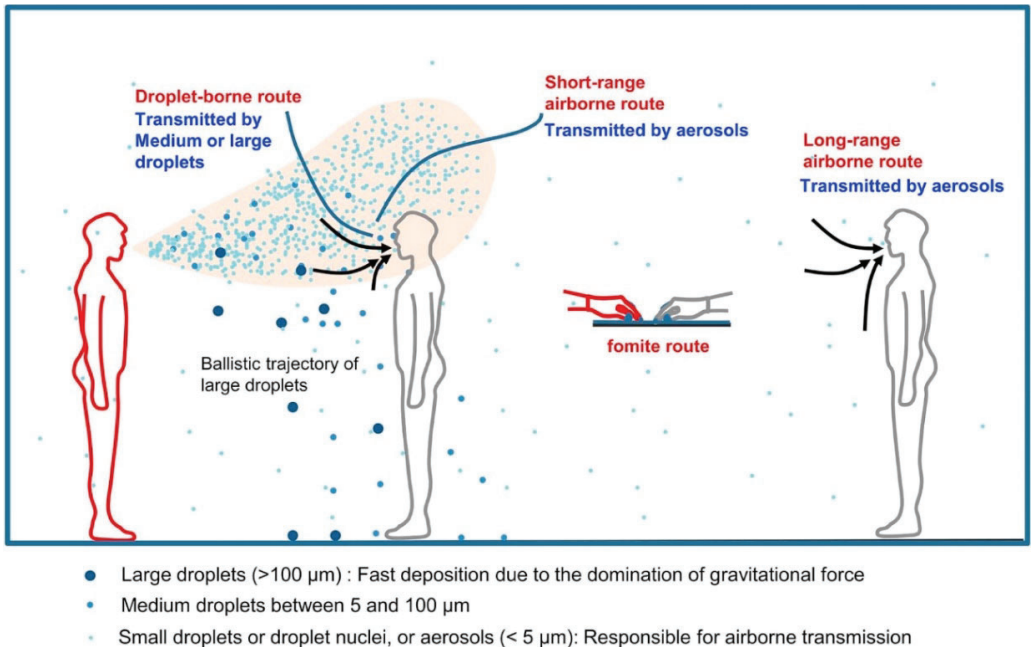


Figure 1. Visual of fomite/surface, droplet, and airborne transmission (Wei and Li, 2016).

The data in the existing publicly available COVID-19 knowledge database demonstrate that individuals with COVID-19 alter the physical characteristics of surfaces and the air of occupied spaces.

1. Altering the physical characteristics of surfaces by persons with COVID-19 in occupied spaces is documented

Studies available early in the current pandemic evaluated the impacts of viral material on surfaces. Overwhelmingly, the data generated indicate that individuals testing positive for COVID-19 shed viral material into the surrounding environment. This is the case for both symptomatic and asymptomatic individuals.

While some studies only focused on RNA and were limited in the ability to identify infectious SARS-CoV-2 on surfaces, the lack of a currently established dose threshold for the virus must be considered in context. Some studies attempted to determine how long the viral material may

[1] Regardless of the terms used by public health agencies, respiratory droplets and droplet nuclei are classified as aerosols under the traditional industrial hygiene definition, which is a collection of solid or liquid particles dispersed in a gas, like air. Generally, an aerosol's size, shape, and density will determine how long it remains suspended in the air. Smaller aerosols will travel far whereas larger aerosols will be influenced more heavily by gravity and air currents, thus traveling only short distances. See Figure 1.

persist in the environment using laboratory experimentation. Below is a sample of the studies that demonstrate COVID-19 alterations in the physical characteristics of surfaces in occupied spaces:

- An article published online on February 6, 2020 by Kampf et al. evaluated other corona viruses (e.g., SARS-CoV-1 and Middle East Respiratory Syndrome (MERS)) and identified that "human coronaviruses can remain infectious on inanimate surfaces for up to 9 days." (Kampf et al., 2020).
- A research letter published online on March 4, 2020 in the Journal of the American Medical Association (JAMA) found that surface samples collected from an isolation room in a Singapore hospital that housed a symptomatic COVID-19 patient were positive for viral RNA. Surfaces where SARS-CoV-2 RNA was identified included air outlet fans, the toilet bowl, the sink, the bed rail, the floor, a light switch, the window, and a door handle (Ong et al., 2020).
- On March 17, 2020, the New England Journal of Medicine published a correspondence from Van Doremalen et al. (2020). The authors find that "our results indicate that aerosol and fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious in aerosols for hours and on surfaces up to days (depending on the inoculum shed)." This study was in partnership with the National Institutes of Health (NIH), the CDC, UCLA, and Princeton University.
- The European Centre for Disease Prevention and Control (ECDC) published a disinfection guidance document on March 26, 2020 stating that there is a "belief that fomites play a role in transmission of SARS-CoV-2" (ECDC, 2020).
- A March 29, 2020 WHO Modes of Transmission scientific brief stated that fomite transmission of COVID-19 may also occur in the immediate environment containing an infected individual. The brief finds "…transmission of the COVID-19 virus can occur by direct contact with infected people and indirect contact with surfaces in the immediate environment or with objects used on the infected person (e.g., stethoscope or thermometer)" (WHO, 2020b).
- Byroukov et al. (2020) evaluated the impact of humidity and temperature on infectious SARS-CoV-2 deposited onto surfaces and found that lower relative humidity and temperature levels contributed to the virus's survivability. The authors found that "a potential for fomite transmission may persist for hours to days in indoor environments and have implications for assessment of the risk posed by surface contamination in indoor environments." (Byroukov et al., 2020).[2]
- A recent study evaluated the persistence of SARS-CoV-2 on common surfaces and at differing temperatures. Under controlled, dark laboratory conditions at 20°C (68°F), infectious SARS-CoV-2 was detectable 28 days post inoculation for the non-porous surfaces tested and 14 days post inoculation for cotton cloth. While performed in controlled laboratory conditions using measures to increase the survivability of the virus on a surface (e.g., dark, humid environment), the authors conclude that "[t]his data should be

[2] The lower humidity levels, like those that exist in Las Vegas, can contributed to the virus's persistence on surfaces.

considered in strategies designed to mitigate the risk of fomite transmission during the current pandemic response." (Riddell et al., 2020).

- Wei et al. (2020) collected samples in a Chendgu, China hospital isolation ward and found that surfaces in a room housing a single asymptomatic individual were positive for viral material, including the bedrail, the pillow, the bedsheet, and the air exhaust outlet.
- Yamagishi et al. (2020) evaluated surface contamination on the Diamond Princess Cruise ship. The authors found that "… it is evident surface contamination occurred in rooms occupied by persons who were classified as being asymptomatic at the time they vacated their cabins."
- Santarpia et al. (2020) evaluated both symptomatic and asymptomatic individuals housed at the University of Nebraska Medical Center campus. The thirteen (13) individuals were those that were evacuated from the Diamond Princess cruise ship. The authors state that "[t]aken together, these data indicate significant environmental contamination in rooms where patients infected with SARS-CoV-2 are housed and cared for, regardless of the degree of symptoms or acuity of illness." These studies support the idea that individuals that are infected with SARS-CoV-2 can shed the virus yet display no signs of being sick.

2. Altering the physical characteristics of air in occupied spaces by persons with COVID-19 is documented

Previous epidemiological investigations into SARS-CoV-1 (2002) showed that the primary modes of transmission were large respiratory droplets and person-to-person contact (CDC, 2007). Alterations to the physical characteristics of the air by respiratory droplets from persons with COVID-19 was, therefore, initially presumed and has been validated.

Studies performed throughout the COVID-19 pandemic establish that air near infected individuals contain suspended virus particles. This aerosolized route is now a CDC recognized mode of transmission for COVID-19 (CDC, 2020b). It is important to note that we still do not yet know the infectious dose of SARS-CoV-2 required to result in disease (i.e., COVID-19) (CDC, 2020b). Without the dose established, no potential route of transmission should be discounted. Below is a sample of the studies that demonstrate COVID-19's alteration to the physical characteristics of air in occupied spaces.

- Early initial accounts showed that viral material (e.g., RNA) could be detected in air samples and on ventilation fixtures (e.g., outlet fan from Ong et al., 2020).
- An April 1, 2020 letter from the National Academy of Sciences (NAS) to the Executive office of the President addresses the possibility of SARS-CoV-2 bioaerosol spread. The letter stated that "[w]hile the current SARS-CoV-2 specific research is limited, the results of available studies are consistent with aerosolization of virus from normal breathing." (NAS, 2020).
- A Morawska and Cao (2020) article was published on April 10, 2020 and urged national authorities to recognize that SARS-CoV-2 spreads through air and that the air transmission of the virus should be taken seriously during the course of the pandemic. This was the first of a few articles with Morawska as the primary author urging those in public health roles to acknowledge the airborne transmission route of the virus. One of

those subsequent articles was an open communication to the medical community and both national and international bodies presenting the case that potential airborne spread of COVID-19 should be recognized.

- Earlier in the pandemic, professional organizations recommended using engineering controls as a way to control infectious aerosols (e.g., air filtration, increased air flow in HVAC systems, etc.).
- In April 2020, ASHRAE published a position document on infectious aerosols. The document identified that "[t]ransmission of SARS-CoV-2 through the air is sufficiently likely that airborne exposure to the virus should be controlled." (ASHRAE, 2020b).
- In August 2020, AIHA finalized a document titled "Reducing the Risk of COVID-19 using Engineering Controls" where the control of aerosols is discussed and includes recommendations for reducing exposure (AIHA, 2020b).
- In response to the weight of evidence available in the scientific literature, on October 5, 2020, CDC updated their guidance documents to include that COVID-19 can be spread by aerosol transmission (NYDN, 2020; CDC, 2020b).

Opinion 2: The Nevada Governor's closure order was a reasonable response to address the impact of COVID-19 on surfaces and the air of occupied spaces at and in the vicinity of Treasure Island.

Effective hazard control solutions can be evaluated using the CDC National Institute for Occupational Safety and Health (NIOSH) hierarchy of controls. This inverted pyramid provides hazard control paradigms from the most effective (in blue) to the least effective (in red). Some of these hazard mitigation controls can be used in combination for more effective control strategies.

Initially, limited administrative controls were implemented in the gaming and public areas of Treasure Island following a notice issued by the Nevada Gaming Control Board on March 16, 2020. The administrative controls included restricting chairs at each gaming table to three (3), requiring that each game machine be cleaned and sanitized at least once every two hours, and that public areas of the facility follow social distancing guidelines (NGCB, 2020a; TI_000226). For context, Treasure Island has more than 2,200 gaming machines (TI, 2020c).

At the time Treasure Island closed, there were no validated, commercially available tests to identify infectious SARS-CoV-2 on surfaces (AIHA, 2020b). Further, any surface testing that may occur in uncontrolled conditions (e.g., public spaces) would only verify the cleanliness of the surface until a space is re-occupied and re-contaminated by an infected individual. The extensive size and scope of a facility can make effective cleaning and disinfection impractical. Data has shown that viral material can persist on surfaces for extended periods of time following the presence of persons with COVID-19 in the occupied space. Episodic cleaning and disinfecting of surfaces is only temporary because people with COVID-19 can re-deposit viral material on surfaces and in the air.

Using the hierarchy of controls for hazard mitigation and applying it to what was scientifically available and physically achievable at the time, the most effective method for eliminating the deposition of viral material on surfaces and in the air in the facility and breaking the chain of

transmission was to eliminate the primary source of COVID-19. People with COVID-19 shed viral material into the environment. Therefore, people were the hazard and eliminating the presence of people at Treasure Island mitigated impacts on surfaces and in the air. See Figure 2.

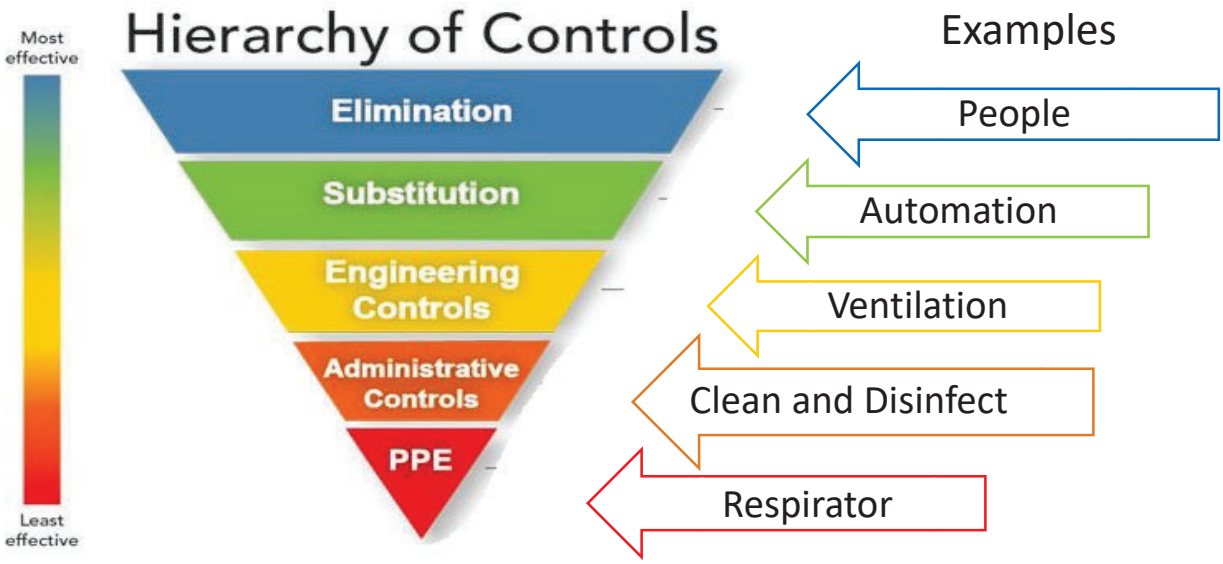


Figure 2: Hierarchy of controls (CDC, 2015) and examples of each control method.

Closing the facility was not unique to Treasure Island. Facilities across the country were closing to eliminate the hazard posed by people with COVID-19. Eliminating SARS-CoV-2 carriers (i.e., people) eliminated the impacts of viral material on Treasure Island surfaces and in the air of occupied spaces, thus stopping the potential for COVID-19 disease transmission to guests and employees at the facility.

Opinion 3: Treasure Island has re-opened with administrative and engineering controls in accordance with best practices to mitigate and control the impact of COVID-19 on surfaces and the air of occupied spaces at the location.

On April 28, 2020 the CDC issued guidance for cleaning and disinfecting public spaces, workplaces, businesses, schools, and homes (EPA, 2020). The document discusses reducing the risk of exposure to COVID-19 by developing, implementing, maintaining, and revising the cleaning and disinfection plan to help reduce exposure risk. The AIHA guidance on workplace cleaning identifies the importance of identifying high touch areas that may require frequent treatment (AIHA, 2020b). Frequency of cleaning and disinfection can depend on the occupant usage patterns, employee population at the facility, and the number of high touch areas. High touch areas, as well as other items, surfaces, and equipment, should be inventoried to determine how often cleaning and disinfection should occur. The CDC says that consideration should be given to items that can be completely removed to reduce handling by people.

Treasure Island has approximately 2,200,000 square feet (ft^2) of conditioned space at the facility. A general breakdown is the first floor of the facility (including the casino space, retail areas, and dining areas) at approximately 287,000 ft^2, and the 2,884 guest rooms account for a total of approximately 1,200,000 ft^2 (TI, 2020d; TI_001456-001458). Detailing plans to mitigate exposure in these areas would require extensive cataloging and evaluation of high touch areas for administrative control applications and evaluating of the physical space to determine how engineering controls could be optimized.

During the time Treasure Island was closed, the facility submitted administrative plans to the Nevada Gaming Commission outlining the safety precautions that Treasure Island would be taking at re-opening (TI, 2020b). These plans incorporated both administrative and engineering controls in preparation for re-opening to aid in hazard mitigation.

The administrative decision was made to reduce capacity in certain areas of Treasure Island as a further exposure mitigation strategy. This reduction limits the impacts of viral material on surfaces and in the air of Treasure Island, thus reducing the potential for transmission to un-infected individuals. The casino was operating at only 50% capacity, along with some food and beverage venues (TI, 2020e). Other areas were closed from public access (e.g., on-site chapels).

Additional administrative controls that were used at Treasure Island included but were not limited to:[3]

- Requiring the use of masks for staff and guests
- Social distancing (including signage and floor markings)
- Cleaning public areas of Treasure Island more often
- Updating the disinfectant used at the facility
- Deep cleaning seats nightly
- Additional staff for cleaning and disinfection
- Staggering when some employees arrive for shifts
- Additional disinfection of cleaning carts
- Reducing the number of items in guest rooms
- Wiping down lobby counter and touch pads after every transaction
- Using disposable menus at the open dining venues
- Turning off select slot machines and other gaming devices to provide socially distanced space between gaming guests
- Closing the spa and jacuzzi

[3] Based on interviews with Treasure Island personnel (Frank Zagari, Kenny Cho, and Craig Taylor) and review of Treasure Island re-opening guidance and SOPs (TI, 2020a; TI, 2020b).

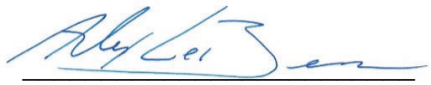
Engineering controls used for re-opening included but were not limited to:[3]

- Opening outside air dampers on HVAC systems for more frequent air exchanges
- Updating parking lot 3rd floor doors and valet doors to electric eye to reduce need to touch handles
- Creation and installation of plastic dividers at dining venues and gaming tables

The combination of administrative and engineering controls used at the facility was designed to control and minimize the opportunity for viral material to deposit on occupied surfaces and to be released in the air of the facility. In turn, the controls reduced the opportunity for exposure and potential transmission of COVID-19 at the facility from contact with contaminated surfaces and inhalation of the air. These precautions are supported by the findings in the previously mentioned Santarpia et al. (2020) study. The authors conclude that "[o]ur study suggests that SARS-CoV-2 environmental contamination around COVID-19 patients is extensive, and hospital IPC [infection prevention and control] procedures should account for the risk of fomite, and potentially airborne, transmission of the virus." The administrative controls implemented following the development of a cleaning and disinfection protocol were designed to reduce impacts from viral material to surfaces and air at Treasure Island and reduce the risk of COVID-19 transmission to uninfected individuals.

The efficacy of the Treasure Island cleaning and disinfection protocol is designed to remain in a steady state with the number of COVID-19 cases. As the pandemic is evolving, increases or decreases in the number of COVID-19 cases in or around Treasure Island may necessitate updates to the facility COVID-19 protocol or facility actions.

This report may be added to or amended based on additional information provided to me and/or new information made available during the course of the COVID-19 pandemic.



Alex LeBeau, PhD, MPH, CIH

November 6, 2020

Appendix A: Dr. Alex LeBeau Curriculum Vitae

Alex Lance LeBeau, PhD, MPH, CIH

Exposure Assessment Consulting, LLC
10524 Moss Park Road, Suite 204-161, Orlando, FL 32832
Phone: 321-263-1333; E-mail: AlexLeBeau@exp-assessment.com

EDUCATION

PhD, Toxicology and Risk Assessment, Univ. of South Florida, Tampa, Florida, 2012
MPH, Master of Public Health, Toxicology and Risk Assessment, Univ. of South Florida, Tampa, Florida, 2007
BS, Animal Science, Univ. of Florida, Gainesville, Florida, 2001

CERTIFICATIONS & LICENSES

- Certified Industrial Hygienist, American Board of Industrial Hygiene, Certification No. CP 11576
- Licensed Mold Assessor, Florida Department of Business and Professional Regulation, No. MRSA2697
- Infection Control Risk Assessment, accredited by The Linders Institute (Orlando, FL)

PROFESSIONAL EXPERIENCE

I am the owner of Exposure Assessment Consulting, LLC in Orlando, FL, where I offer toxicology, industrial hygiene, risk assessment, and public health consulting services. During my thirteen-year career, I have evaluated environmental and occupational exposures and have performed toxicological evaluations of chemicals and biological agents. I have performed human health risk assessments of contaminated sites using U.S. EPA and state regulatory guidelines and have monitored remediation activities at those sites. In order to evaluate exposure impacts on building occupants, I have performed indoor environmental quality assessments, including *Legionella* and water quality assessments, at healthcare, residential, commercial, and industrial facilities. I have been retained as an expert witness and have provided consultation on several occupational and environmental exposure claims. Finally, I have authored safety assessments on consumer products, including antimicrobial pesticide registration dossiers, Generally Recognized as Safe (GRAS) determinations for food ingredients following U.S. FDA regulations for scientific procedures, and submitted a health claim petition to the FDA that was successfully accepted by the agency.

INDUSTRIAL HYGIENE & TOXICOLOGY

- Evaluation of glyphosate-containing herbicide exposure claims from alleged historical use resulting in the development of non-Hodgkin Lymphoma (NHL). Assessment included calculation of a retrospective dose for the active ingredient, evaluation of the passive dosimetry and biomonitoring dataset, and review of regulatory documents and thresholds to perform a risk analysis.
- Assessment of Legionnaires' Disease claims involving alleged exposures at various types of facilities (e.g., hotels, healthcare facilities, multifamily residences, wellness centers, and government facilities). Facility water risk assessments, evaluation of water quality, and identification of potential sources of exposure were performed.
- Consulting on exposure claims involving the following substances and biological agents: carbon monoxide, sulfur gases, polyvinyl chloride, dietary supplement ingredients, fracking chemicals and constituents, polyurethane spray foam insulation, industrial cleaning chemicals, coal ash, mold, and heavy metals.

- Toxicological reviews of various substances including methanol, para-tertiary-octylphenol, total petroleum hydrocarbons, volatile organic carbons (VOCs), polychlorinated biphenys (PCBs), polycyclic aromatic hydrocarbons (PAHs), creosote, proprietary industrial solvents, pesticides, silica, taconite, and particulate matter.
- Toxicology evaluation and support related to methyl cyclohexanone (MCH), 4 methylcyclohexanemethanol (MCHM), and co-occurring chemicals following a substantial release into a river used as a drinking water source in Charleston, WV. Additionally, calculated a site-specific drinking water standard for the methanol that was reported to have been released in the mixture. Assisted with making recommendations to relevant stakeholders and provided follow-up risk assessment and toxicology support.
- United States Environmental Protection Agency (USEPA) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulatory compliance and registration support to companies with products that were making unsupported antimicrobial claims on product labels. Evaluated each company's liability in such a circumstance. Compliance support included working directly with agency regulators to resolve compliance and registration issues.
- Health Canada Pesticide Management Regulatory Agency (PMRA) regulatory compliance and registration support for a novel antimicrobial product distributed by an international client. Performed an extensive toxicological review of the active ingredients and break-down products and provided a written review of the potential health concerns associated with exposure. Prepared a registration application for submission to the regulatory agency and had direct interaction with the regulator during follow-up discussions.
- Composiiton of Generally Recognized as Safe (GRAS) safety dossiers for food ingredients and animal feed ingredients following FDA scienitific procedures rules.
- Indoor air quality evaluations at single family and multi-family residential buildings constructed with defective, imported drywall (i.e., Chinese drywall) across the southern united States. Indoor air of homes constructed with defective drywall was sampled and analyzed for reduced sulfur gases. Analytical results were evaluated to determine residential receptor exposures to gases released from the drywall and any risk associated with potential overexposures to reduced sulfur gases. Reports were composed for property owners explaining the results from sampling in their homes.
- Ambient air quality monitoring at former manufacturing facility that used beryllium to create precision machine parts in Sarasota, FL. During demolition of the facility, ambient air was monitored for beryllium, particulate matter, VOCs (using both photoionization detectors [PIDs] and summa canisters), and asbestos. Employee monitoring using personal sampling pumps and passive dosimeters was also performed. Data were evaluated to determine occupational and community exposures. Weekly reports were prepared for the client summarizing the monitoring activities and evaluated any potential negative impacts to a receptor's health.
- Bioaerosol indoor air quality assessments at health care facilities and commercial facilities across the United States. Evaluation of patient and employee exposures, risk mitigation, and remediation oversight.
- Occupational exposure monitoring at commercial and industrial facilities, including breathing zone sampling for exposures to chemicals and substances, evaluation of particulates, indoor air quality evaluations, noise monitoring and dosimetry, and evaluation of the impacts of the exposures.
- Composition and submission of an oleic acid health claim petition to FDA and successful qualified health claim status determined by the agency establishing that consumption of oleic acid reduces the risk of coronary heart disease.

- Extensive review of relevant toxicity information for an analysis of livestock exposures to xylenes related to a petroleum condensate release in Texas. This included evaluation of groundwater sample data collected from the site and the derivation of a safe exposure level that would be protective of livestock receptors.
- Model occupational and residential receptor exposures using environmental exposure data in relevant media for sites in the midwestern United States. This ultimately allowed for hazard analysis and facilitated the ability to communicate potential risks to stakeholders.
- Toxicity studies oversight at contract research organizations (CROs) to evaluate the safety of food ingredients.
- Evaluate client provided data and publicly available information to evaluate the safety of chemical constituents used in food contact surfaces.

RISK ASSESSMENT

- Risk-based exposure/clean-up limits for occupational/industrial and residential receptors using site-specific exposure parameters and performed subsequent risk assessments following federal and state methodologies. Recommended risk management conclusions and safe practices to be implemented during remediation activities at former industrial facilities.
- Lead exposure limit derivation for residential receptors in close proximity to former industrial facilities. Analysis included determining site-specific lead bioavailability and calculating an exposure limit using biokinetic modeling.
- Hazard analysis to evaluate the potential for health effects associated with creosote and particulate matter originating from a railroad tunnel fire as it related to worker and residential exposures.
- Vapor intrusion assessment at a diesel spill near a commercial building. Modeling was performed to determine the indoor air concentrations that may be associated with residual product under the building. Additionally, occupant exposures were subsequently assessed via air sampling to validate the model's results.
- Air monitoring data evaluation from a crude oil pipeline release. Benzene and other volatile organic compounds (VOCs) were the constituents of concern (COCs) at the site. Continuous ambient air monitoring ensured the safety and health of both workers conducting remediation activities and residents in a nearby community were not adversely impacted. Data were analyzed and risks were communicated daily to stakeholders.
- Human health risk assessment for a Superfund site impacted with polychlorinated biphenyls (PCBs). The assessment was performed in accordance with USEPA guidance and augmented with state-specific exposure parameters.
- Assessed the risk associated with residual mercury found in the soles of select imported sneakers. This included a human health risk assessment and an evaluation of impacts to a landfill's total mercury content following used sneaker disposal.
- Composed a risk assessment for contaminated food products and evaluated the impact that the product may have on potential consumers, including evaluation of the product recall threshold.
- Evaluated adverse event reports in publicly available literature and determined the impact these reports may have on a food manufacturer.

WORK HISTORY

Current	Exposure Assessment Consulting, LLC, Orlando, FL
2017-2019	Forensic Analytical Consulting Services, Orlando, FL
2015-2017	Burdock Group Consultants, Orlando, FL
2013-2015	Conestoga-Rovers and Associates (now GHD), Dallas, TX
2008-2013	ENVIRON International Corporation (now Ramboll), Tampa, FL
2007-2008	Independent Consultant, Tampa, FL

PROFESSIONAL AFFILIATIONS & HONORS

American Industrial Hygiene Association (AIHA): Member

- 2020 Secretary: AIHA Indoor Environmental Quality Committee
- AIHA Legionella Body of Knowledge Committee
- 2014 AIHA Future Leaders Institute, AIHA, Washington, D.C

American Industrial Hygiene Association, Florida Chapter: Member (2009-2012, 2017-Present)

- 2009-2012: Professional Development Coordinator

Society of Toxicology: Member

American Board of Industrial Hygiene (ABIH): Member

Roundtable of Toxicology Consultints: Member

American Conference of Governmental Industrial Hygienists (ACGIH): Member

- Bioaerosol Committee: Member candidate

UNIVERSITY AFFILIATION

University of South Florida College of Public Health: Affiliate Assistant Professor

PUBLICATIONS

LeBeau, A. Sutherland, D., Bourgeois, M., Driver, J., Harbison, R. Examination of Urinary Chlorpyrifos Biomarker Concentrations and Heart Rate in a Sample of US Children and Adolescents. *Occupational Diseases and Environmental Medicine*, 2020 (8): 163-174.

LeBeau, A. Nonahood Businesses and COVID-19: Practical Methods for Addressing Employee and Customer Safety. *Nonahood News*, October 2020.

LeBeau, A. Addressing SARS-CoV-2 (COVID-19) Exposure Risk Using Engineering Controls. EHS Daily Advisor: https://ehsdailyadvisor.blr.com/2020/08/addressing-sars-cov-2-covid-19-exposure-risk-using-engineering-controls/ Published August 5, 2020.

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Krause, D., Marcham, C., Springston, J., LeBeau, A., Rottersman, R., Froehlig, T., Ashley, B. Guidance Document: Recovering from COVID-19 Building Closures. AIHA, 2020. https://aiha-

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Bourgeois, M., S Saji, S Jones, G Johnson, A LeBeau, and R Harbison. Serum Levels of Per- and Polyfluoroalkyl Compounds among the General Population. *Toxicologist*, 2020

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Dolan, L.C., Matulka, R.A., LeBeau, A.L., Boulet, J.M. Two new nontoxic, non-pathogenic strains of *Sphingomonas elodea* for gellan gum production. *Regul Toxicol Pharmacol*, 2016 (78):37-44.

LeBeau, A. L. Insects as protein replacements. *Nutraceutical Business Review*, 2016. http://www.nutraceuticalbusinessreview.com/news/article_page/Insects_as_protein_replacements/114705

LeBeau, A.L., Matulka, R. A. Ingredient Identification in the Time of FSMA. *Nutritional Outlook*. November 2015. http://www.nutritionaloutlook.com/trends-business/FSMA/1511

LeBeau, A. A Comparison of Ambient Air BTEX Concentrations between Two Counties with Active Petroleum Wells. *Toxicologist*, 2015.

LeBeau, A., Pawlisz, A., Public Health Concerns Surrounding Fine Particulate Matter Generated from Hydraulic Fracturing. *Toxicologist*, 2014

LeBeau, A.L., Johnson, G.T., McCluskey, J.D., Harbison, R.D. Evaluation of Urinary Pesticide Biomarkers among a Sample of the Population in the United States. *J Clinic Toxicol*, 2012: S5:003.

LeBeau, A., Johnson, G., McCluskey, J., and Harbison, R. Evaluation of Urinary Pesticide Biomarkers among Children and Adolescents. *Toxicologist*, 2012

LeBeau, A., Johnson, G., McCluskey, J., and Harbison, R. Evaluation of Urinary Pesticide Biomarkers among Residents of the United States. *Toxicologist*, 2010

LeBeau, A., Gauthier, T., Poole, J., and DeMott, R. Determination of Reduced Sulfur Gases in Construction Materials. Technical Symposium on Corrosive Imported Drywall, 2009 http://www.drywallsymposium.com/blind/posters.html

BOOK CHAPTERS

LeBeau, A. Manganese. *Hamilton and Hardy's Industrial Toxicology* (Harbison, R.D., Bourgeois, M.M., and Johnson, G.T. Eds.), Sixth Edition. John Wiley and Sons, Inc., New Jersey, 2015: pp 149-156.

LeBeau, A. Platinum Group Elements. *Hamilton and Hardy's Industrial Toxicology* (Harbison, R.D., Bourgeois, M.M., and Johnson, G.T. Eds.), Sixth Edition. John Wiley and Sons, Inc., New Jersey, 2015: pp 187-192.

LeBeau, A. Platinum. *Hamilton and Hardy's Industrial Toxicology* (Harbison, R.D., Bourgeois, M.M., and Johnson, G.T. Eds.), Sixth Edition. John Wiley and Sons, Inc., New Jersey, 2015: pp 193-198.

PRESENTATIONS

Furnaces North America 2020: COVID-19: An Update on Transmission, Control Methods, and Risk Communication. September 30, 2020.

Furnaces North America 2020: Plant Cleanliness and Facility Risk Mitigation from Closure due to COVID-19. September 30, 2020.

Safeopedia Webinar: Indoor Work Environment and Exposure Assessment. August 26, 2020

Florida Section American Water Works Association (AWWA) Fall Conference. Platform presentation: Legionella Building Water Management and the Local Water Utility: Proactive Approaches that can Reduce End-User Risk. Orlando, FL, 2019.

American Industrial Hygiene Conference and Exposition (AIHce). Platform presentation: Legionella and Secondary Treatment Systems – An Evaluation of Cumulative Risk From Exposure to Disinfectants and Byproducts. Minneapolis, MN, 2019.

American Industrial Hygiene Conference and Exposition (AIHce). The Wide World of Lead Exposure – A Look Beyond the Workplace. Minneapolis, MN, 2019.

Florida American Industrial Hygiene Association (FL AIHA) Spring Conference. Platform Presentation: Legionella in 2019: The current standard of care and how to minimize risk. Altamonte Springs, FL, 2019

American Industrial Hygiene Conference and Exposition (AIHce). Platform presentation: Disinfection Byproducts Risk Management. Philadelphia, PA, 2018.

Florida Water Resources Conference. Platform Presentation: Building Water Management and the Local Water District: How a Proactive Approach Can Reduce End-User Risk. Daytona Beach, FL, 2018.

Institute of Food Technologists. Platform presentation: Generally Recognized as Safe (GRAS) in the New Millennium of Technology and Food Science. Chicago, IL, 2016.

Institute of Food Technologists. Platform presentation: FDA's Guidelines on Nanotechnology. Chicago, IL, 2016.

Society of Toxicology Annual Meeting. Poster Presentation: A Comparison of Ambient Air BTEX Concentrations between Two Counties with Active Petroleum Wells. San Diego, CA, 2015.

Society of Toxicology Annual Meeting. Poster Presentation: Public Health Concerns Surrounding Fine Particulate Matter Generated from Hydraulic Fracturing. Phoenix, AZ, 2014.

Society of Toxicology Annual Meeting. Poster Presentation: Evaluation of Urinary Pesticide Biomarkers Among Children and Adolescents. San Francisco, CA, 2012.

Society of Toxicology Annual Meeting. Poster Presentation: Evaluation of Urinary Pesticide Biomarkers Among Residents of the United States. Salt Lake City, UT, 2010.

Technical Symposium on Corrosive Imported Drywall. Poster Presentation: Reduced Sulfur Gases in Construction Materials. Tampa, FL, 2009.

Appendix B: Dr. Alex LeBeau Materials Considered List

(Treasure Island LLC v. Affiliated FM Insurance Company)

1. American Industrial Hygiene Association (AIHA), *Reducing the Risk of COVID-19 using Engineering Controls, Version 2* (August 28, 2020). (AIHA, 2020a)
2. AIHA, *Workplace Cleaning for COVID-19* (April 2020). (AIHA, 2020b)
3. AIHA, The Role of the Industrial Hygienist in a Pandemic, 2006. (AIHA, 2006)
4. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), *Thermal Environmental Conditions for Human Occupancy*, ANSI/ASHRAE standard 55-2013 (2013). (ASHRAE, 2020a)
5. ASHRAE, *ASHRAE Position Document on Infectious Aerosols* (April 14, 2020). (ASHRAE, 2020b)
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7. Centers for Disease Control and Prevention (CDC), 2007 *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, (Last Updated July 2019). (CDC, 2007)
8. CDC, *First Travel-related Case of 2019 Novel Coronavirus Detected in United States* (January 21, 2020). (CDC, 2020a)
9. CDC, Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission, October 5, 2020. (CDC, 2020b)
10. CDC, *COVID-19 Overview and Infection Prevention and Control Priorities in non-US Healthcare Setting* (August 12, 2020). (CDC, 2020c)
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14. KTNV, *Earlier coronavirus cases confirmed in Nevada after 13 investigation* (May 1, 2020). (KLVN, 2020)
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16. MGM Resorts, *MGM Resort International Statement on COVID-19 Case Involving Guest at the Mirage* (March 11, 2020). (MGM, 2020)
17. Morawska, L., Cao, J., 2020. Airborne transmission of SARS-CoV-2: The world should face the reality. Environ. Int. https://doi.org/10.1016/j.envint.2020.105730. (Morawska and Cao, 2020)
18. National Public Radio (NPR), *Trump Declares Coronavirus A Public Health Emergency And Restricts Travel From China* (January 31, 2020). (NPR, 2020)
19. Nevada Gaming Control Board (NGCB), Notice# 2020-18, Restrictions on Operations during COVID-19 Outbreak (March 16, 2020). TI-000226 (NGCB, 2020a; TI-000226)
20. NGCB, Notice# 2020-19, Notice to Licensees: Temporary Suspension of licensee Operations (March 17, 2020). TI_000252 (NGCB, 2020b; TI_000252)
21. New York Daily News (NYDN), *CDC admits COVID-19 can spread through tiny aerosol droplets suspended 'for minutes to hours'* (October 5, 2020). (NYDN, 2020)
22. Ong, S.W.X., Tan, Y.K., Chia, P.Y., Lee, T.H., Ng, O.T., Wong, M.S.Y., Marimuthu, K., 2020. Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) from a Symptomatic Patient. JAMA - J. Am. Med. Assoc. https://doi.org/10.1001/jama.2020.3227. (Ong et al., 2020)
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25. Southern Nevada Health District (SNHD), COVID-19 Report, Clark County, NV (March 20, 2020). (SNHD, 2020a)
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29. State of Nevada, Executive Department, Declaration of Emergency Directive 003 (March 18, 2020) TI_000637-000638. (Nev ED 002, 2020; TI_000637-000638)
30. State of Nevada, Executive Department, Declaration of Emergency Directive 010 Stay At Home Order (March 18, 2020) TI_000785-000786. (Nev ED 010; TI_000785-000786)

31. State of Texas, Governor Abbott Issues Executive Order Implementing Essential Services And Activities Protocols (March 31, 2020). (TX EO, 2020)
32. State of Washington, Proclamation by the Governor Amending Proclamation 20-05, 20-25: Stay Home-Stay Healthy (March 23, 2020). (Wash 20-25, 2020)
33. The National Academy of Sciences (NAS), *Rapid Expert Consultation on the Possibility of Bioaerosol Spread of SARS-CoV-2 for the COVID-19 Pandemic (April 1, 2020).* (NAS, 2020)
34. Treasure Island COVID-19 Prevention and response: Standard Operating Procedures (SOP). (TI_001429-001441) (TI, 2020a)
35. Treasure Island Hotel and Casino Guidance on Preparing Workplace Health and Sanitation of COVID-19 Re-opening (TI_001391-001428). (TI, 2020b)
36. Treasure Island, Slot Machines website. (TI, 2020c)
37. Treasure Island, General Property Information March 20, 2018 to March 20, 2019 (TI_001456-001458). (TI, 2020d)
38. Treasure Island LLC's Responses to Affiliated FM Insurance Company's First Set of Interrogatories, Case No.: 2:20-cv-00965-JCM-EJY, October 16, 2020. (TI, 2020e)
39. U.S. Department of Health and Human Services (HHS), *Secretary Azar Declares Public Health Emergency for United States for 2019 Novel Coronavirus* (January 31, 2020). (HHS, 2020)
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41. US Environmental Protection Agency (EPA), *Guidance for Cleaning and Disinfecting: Public Spaces, Workplaces, Businesses, Schools, and Homes* (April 28, 2020). (EPA, 2020)
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44. Wei, L., Lin, J., Duan, X., Huang, W., Lu, X., Zhou, J., Zong, Z., 2020. Asymptomatic COVID-19 Patients Can Contaminate Their Surroundings: an Environment Sampling Study. mSphere 5. https://doi.org/10.1128/msphere.00442-20. (Wei et al., 2020)

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46. World Health Organization (WHO), *Timeline of WHO's response to COVID-19* (9 September 2020). (WHO, 2020a)
47. WHO, *Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations: Scientific brief* (29 March 2020). (WHO, 2020b)
48. WHO, *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)* (16-24 February 2020). (WHO, 2020c)
49. WHO, *WHO announces COVID-19 outbreak a pandemic* (12-03-2020). (WHO, 2020d)
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Appendix C: Deposition or Trial Testimony for Alex LeBeau, PhD, MPH, CIH since November 2016

1. Giglio v. Monsanto Company; Case No. 3:16-cv-05658-VC. United States District Court, Northern District of California